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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,708	09/08/2003	Yao-Hwan Kao	67,200-1093	2305

7590 09/27/2004  
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EXAMINER

MCALAEVEY, ANDREW JAMES

ART UNIT PAPER NUMBER

1746

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/658,708

Applicant(s)

KAO ET AL.

Examiner

Andrew McAleavey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election of Group I, claims 1-14, in the reply filed on August 25, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Furthermore, the Examiner notes that the non-elected claims were canceled in the response.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al., U.S. Patent No. 6,170,165 (hereinafter "Chen").

In Figure 1 and the accompanying description in columns 1 and 2 of the reference, Chen discloses a support for receiving a substrate (12), a dispensing head (described at column 1, line 52), a knife ring vertically adjustably mounted beneath the support (40) and a manual, mechanical vertical adjustment mechanism (column 2, line 5). The Examiner notes that nothing in claim 1 requires that the vertical adjustment mechanism be automatic or actuated by other than simple manual means.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Tateyama, U.S. Patent No. 5,871,584. Chen is applied as above in the rejection under Section 102.

In Figure 11 and the accompanying description in column 8, lines 66-67 through column 9, line 12, Tateyama discloses a support for receiving a substrate (21), a dispensing head (solution nozzle 22), and a vertical adjustment mechanism for a container (32) comprising several lifting cylinders (35). From the context of the reference, the lifting cylinders 35 disclosed by Tateyama appear to be fluid-actuated (and are read by the Examiner as being such), as recited in claim 2; however, if they are not, then it would have been obvious to use fluid-actuated cylinders in the apparatus disclosed by Tateyama.

The Examiner notes that portions of the Tateyama container 32 in Figure 11 are shown as projecting outwardly from the sidewalls to positions that appear to be just under the substrate. Tateyama also discloses at column 9, lines 20-25 that outwardly projecting portions of its container (some of which appear to project under the substrate in Figure 11) "prevent an entry, into an inside chamber 36a, of a mixture of washing liquid and developing solution."

Chen generally discloses the importance of maintaining a proper gap distance between the knife ring and the substrate. It would have been obvious to modify Chen to include the fluid-actuated vertical movement system of Tateyama in order to perform gap maintenance and adjustment without the complex measurement and adjustment procedure disclosed by Chen. As was noted above, both the Chen structure and the Tateyama structure perform similar functions by preventing fluid from flowing to particular areas.

With respect to the dimension of 290 mm for the knife ring recited in claims 3, 6, 8, 10, 12, and 14, 300 mm is a well-known standard size for a semiconductor wafer used in semiconductor wafer processing. Chen clearly shows in Figure 1 that the knife ring extends to a diameter slightly smaller than that of the wafer itself. Given the disclosure of Chen, it would have been obvious to give the knife ring a dimension of 290 mm, slightly smaller than that of the wafer, in order to provide good contact between the backside of the wafer and the knife edge without exposing too much of the wafer backside to undesirable fluids. The Examiner notes that Applicants have not provided any evidence of criticality with respect to this feature that might rebut a *prima facie* case of obviousness.

With respect to the hydraulic and pneumatic cylinder limitations recited in claims 7 and 11, as noted above, Tateyama discloses cylinders, but does not specify their type. Further to the comments above regarding the cylinders, if the cylinders are fluid cylinders, it is the Examiner's position that they would be either hydraulic (i.e., liquid-actuated) or pneumatic (i.e., gas-actuated), given the use to which they are put in

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Tateyama. However, regardless of whether or not the lifting cylinders of Tateyama are read to be fluid cylinders, one of ordinary skill in the art would have found it obvious to select either a pneumatic cylinder or a hydraulic cylinder (both members of the broadly disclosed genus of lifting cylinders) in order to optimize various performance characteristics of the apparatus, such as vibrational response, stability, and load handling characteristics.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew McAleavey whose telephone number is 571-272-0542. The examiner can normally be reached on Monday through Friday, 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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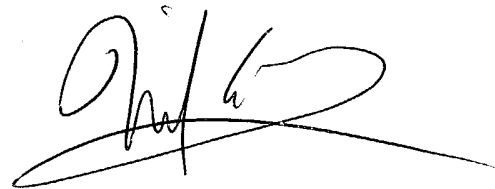
For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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AM

9/23/04

**MICHAEL BARR**  
**SUPERVISORY PATENT EXAMINER**

A handwritten signature in black ink, appearing to read 'M. Barr', with a long horizontal flourish extending to the right.